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PATENT  
Attorney Docket No. YO999-190

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Earl H. BOOTH et al.

Serial No: 09/327,708

Filed: November 17, 1998

For: REPRESENTING, CONFIGURING,  
ADMINISTERING, MONITORING, AND/OR  
MODELING CONNECTIONS USING CATALOGS  
AND MATRIXES

Examiner: Adnan M. MIRZA

Art Unit: 2145

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Dear Sir:


I hereby certify that the following documents are being  
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1. THIRD SUPPLEMENTAL APPEAL BRIEF (18 pages); and
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Respectfully submitted,

Dated: May 15, 2006

  
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**THIRD SUPPLEMENTAL APPEAL BRIEF**

Board of Patent Appeals and Interferences  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The Appellant submits this Third Supplemental Appeal Brief pursuant to 37 C.F.R. §41.37(a)(1) in furtherance of the Notice of Appeal timely filed in this case on December 20, 2005, and the Notice of Non-Compliance mailed April 14, 2006, setting a one-month shortened statutory period of brief filing expiring May 15, 2006, since May 14, 2006 falls on a Sunday.

No fee is believed due with this Third Supplemental Appeal Brief, however, should a fee be required please charge Deposit Account 50-0510 the required amount.

**Real Party In Interest**

The real party in interest is International Business Machines Corporation.

**Related Appeals And Interferences**

None.

Application Serial No. 09/327,708

#### **Status of Claims**

Claims 1-45 and 91-96 are pending in the present application, with claims 1 and 91 being independent claims. Claims 46-87 are withdrawn. It is noted that claims 88-93 were renumbered to claims 91-96 in the Final Office Action dated July 1, 2004 ("FOA").

Claims 1-45 and 91-96 were rejected in the Office Action dated September 20, 2005 ("OA"). Claims 1-45 and 91-96 are appealed herein.

Appendix A contains a listing of the claims.

#### **Status of Amendments**

No amendments to the claims were made after the Final Office Action of July 1, 2004.

#### **Summary of Claimed Subject Matter**

The claimed invention is directed to methods for intuitively representing connections of network elements. App., pg. 3, ln. 20 - pg. 4, ln. 2. A network element is a start or endpoint of a connection. App., pg. 3, ln. 9-10 and Fig. 1.

The invention lists network elements into named sets called "catalogs." App., pg. 3, ln. 13. Furthermore, catalogs may themselves include other catalogs. App., pg. 3, ln. 13-16. Thus, catalog/elements can be embedded within other catalog/elements. App., pg. 12, ln. 5-8.

In accordance with the invention, a matrix is created between one or more catalogs, wherein the intersections of cells within the matrix represent connections. App., pg. 9, ln. 11-26 and Fig. 3. Multiple connections between the same endpoints are created within the intersection block by logically "stacking" the intersection blocks. App., pg. 10, ln. 16-18 and Fig. 4. Connection information may further be embedded inside the matrix and a user views such information by selecting corresponding cells. App., pg. 12, ln. 5-27 and Fig. 6.

Application Serial No. 09/327,708

As recited in claim 91, one aspect of the invention is a method for representing on a display a connection representation. App., pg. 6, ln. 20 - pg. 7, ln. 2. As shown in Fig. 2, at least one catalog of data elements is formed. App., pg. 7, ln. 14-15 and Fig. 2, item 210. Next, a matrix of catalog elements is created for the data elements of the data catalog. App., pg. 7, ln. 15-15 and Fig. 2, item 220. A connection representation is formed between pairs of element in each data catalog. App., pg. 7, ln. 15-17 and Fig. 2, item 230. From this connection information, actions may be taken within the network to cause the network to instantiate the defined connections. App., pg. 7, ln. 17-20. A network action can then be taken employing the matrix. For example, network administrator may use the matrix created as a basis for monitoring, problem determination, tuning and/or modeling. App., pg. 7, ln. 20-23 and Fig. 2, items 240-270.

#### **Grounds of Rejection to be Reviewed on Appeal**

1. Whether claims 1-45 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,563,793 to Golden et al. (hereinafter "Golden") and U.S. Patent No. 5,867,495 to Elliott et al. (hereinafter "Elliott").

2. Whether claims 91-96 are unpatentable under 35 U.S.C. §103(a) over Golden and Elliott.

3. Whether there is any motivation to combine or modify Golden with Elliott.

#### **Argument**

##### **I. Claims 1-45 are not Obvious in View of Golden and Elliott**

Claims 1-45 were rejected by the Examiner as allegedly obvious in view of Golden and Elliott. OA, ¶ 2. A *prima facie* case for obviousness can only be made if the combined reference documents teach or suggest all the claim limitations. MPEP 2143.

Application Serial No. 09/327,708

Claim 1 of the present Application recites, in part, "A method for representing interconnection of a plurality of elements on a network." The Office Action appears to argue that Golden teaches such a method, but provides no evidence in support of this position. OA, ¶ 2. The Appellant respectfully submits that there is no teaching or suggestion in Golden of a method for representing interconnection of a plurality of elements on a network.

Claim 1 further recites, in part, "providing a first catalog for a first subset of said elements, and providing a second catalog for a second subset of said elements." In rejecting claim 1, the Office Action alleges that these claim limitations are disclosed by Golden at column 5, lines 60-67. OA, ¶ 2.

Golden appears to disclose a technique for providing guaranteed quality and/or class of service in a computer network. Golden, col. 1, ln. 11-21. The cited text alleged by the Examiner to teach the above limitations of claim 1 reads,

According to a further aspect of the invention, an apparatus according to the invention further includes a network control system server coupled to different local area networks and also coupled to controllable network elements within an interconnection path between the local area networks. Enterprise control points within the network are further adapted to communicate with the network control system server. Golden, col. 5, ln. 60-67.

The Appellant respectfully submits, however, that this passage is completely devoid of any discussion of providing a first catalog for a first subset of said elements, and providing a second catalog for a second subset of said elements, as recited in claim 1.

The Examiner attempts to reconcile the differences between claim 1 and Golden by stating that one of ordinary skill in the art "can interpret the Local Area Networks as groups or catalogs of different network elements." FOA, ¶ 54. As mentioned above, the present application refers to catalogs as named sets listing network elements. App., pg. 3, ln. 13. The Examiner, however,

Application Serial No. 09/327,708

ignores the plain meaning of the term "catalog," and substitutes in its place objects being cataloged. Furthermore, the Examiner provides no evidence justifying such an extraordinary interpretation of the claim language. The Appellant respectfully submits that the Examiner's position is colored by hindsight knowledge impermissibly derived from the Applicant's disclosure.

The Appellant further counters that the Examiner's statement is a gross mischaracterization of claim 1. Claim 1 recites catalogs of subsets of elements, not "groups or catalogs of different network elements," as stated by the Examiner. Such a statement implies that the Examiner equates catalogs with groups. A catalog is a list or enumeration of items, whereas a group is an assemblage of two or more items. See, for example, Webster's Ninth New Collegiate Dictionary, 1989. Contrary to the Examiner's assertion, it is respectfully submitted that a Local Area Network cannot be interpreted as a catalog or a list of network items.

Claim 1 further recites, in part, "forming a connection representation for at least a subset of the pairs." The Office Action cites Golden at col. 9, lines 60-67 as disclosing these claim limitations. OA, ¶ 2. The cited passage of Golden is concerned with "determining the overall capacity of the first available path by determining from network elements registry 57 whether the minimum bandwidth available through each link, switch, and switch port in the path will be sufficient to fulfill the bandwidth and quality of service requested for the connection." Golden, col. 9, ln. 60-67.

The Appellant respectfully submits that nowhere in Golden, including the Examiner's cited passage, is there mention of forming a connection representation. The Office Action makes no attempt beyond citing the disparate passage to justify the Examiner's conclusion that forming a connection representation for at least a subset of the pairs is taught or suggested by Golden.

Claim 1 also recites, in part, "creating a matrix of connection cells formed by an intersection of a pair of elements."

Application Serial No. 09/327,708

The Office Action states that Golden does not disclose this claim element. OA, ¶ 2. Furthermore, the Office Action does not provide any teaching in Elliott that would teach or suggest someone skilled in the art the operation of creating a matrix of connection cells formed by an intersection of a pair of elements, as recited in claim 1.

Specifically, the Office Action alleges that Elliott discloses a "database request to create, read, update or delete exiting records or data fields on behalf of the user," a "db admin includes the physical control of data resources such as establishing data locations, allocating physical storage, allocating memory, loading data stores, optimizing access paths, and fixing data base problems," and "logical control of data such as auditing, reconciling, migrating, cataloging, and converting data." The Appellant respectfully submits that none of these features are claimed by claim 1. Moreover, no evidence is provided that these features would somehow teach or suggest to someone skilled in the art the operation of creating a matrix of connection cells formed by an intersection of a pair of elements, as recited in claim 1.

Thus, for least these reasons, the Appellant respectfully submits that Golden and Elliott, either alone or in combination, do not teach or suggest all the claim limitations of claim 1. Moreover, the Appellant believes that the rejection of claim 1 is improper and respectfully requests that the rejection of claim 1 be reversed by the Board.

Claims 2-45 are dependent on and further limit claim 1. Since claim 1 is believed allowable, claims 2-45 are believed allowable for at least the same reasons as claim 1. The Appellant therefore requests that the Board reverse the rejection of claims 2-45 as well.

Application Serial No. 09/327,708

**II. Claims 91-96 are not Obvious in View of Golden and Elliott**

Claims 91-96 were rejected by the Examiner as allegedly obvious in view of Golden and Elliott. OA, ¶ 2. A *prima facie* case for obviousness can only be made if the combined reference documents teach or suggest all the claim limitations. MPEP 2143.

Claim 91 of the present Application recites, in part, "A method for representing on a display a connection representation." The Office Action appears to argue that the combination of Golden and Elliott teaches such a method, but provides no evidence in support of this position. OA, ¶ 47. The Appellant respectfully submits that there is no teaching or suggestion in either Golden or Elliott of a method for representing interconnection of a plurality of elements on a network.

The Office Action also alleges that Elliott discloses "forming at least one catalog of data elements" at column 37, lines 18-24. The Appellant respectfully disagrees with this position.

The cited passage of Elliott reads, "dbAdmin 2238 includes the physical control of data resources such as establishing data locations, allocating physical storage, allocating memory, loading data stores, optimizing access paths, and fixing database problems. dbAdmin 2238 also provides for logical control of data such as auditing, reconciling, migrating, cataloguing, and converting data." The Appellant submits that there is no mention or suggestion in this passage of forming at least one catalog of data elements. Furthermore, no evidence is offered in the Office Action reconciling the disparity between the cited passage and the claim element.

Claim 91 recites, in part, "creating a matrix of catalog elements for the data elements of at least one of said at least one data catalog; forming a connection representation between pairs of elements in each said at least one data catalog; instantiating connections in the connection representation; and



Application Serial No. 09/327,708

employing the matrix in a network action." In rejecting claim 91, the Office Action alleges that these claim limitations are disclosed by Golden at column 8, lines 16-23. OA, ¶ 47. The Appellant respectfully disagrees with the Examiner's assertions.

Golden, in the cited passage, states, "As the functionality of ECP 50 is shown in more detail in FIG. 5, signaling interface function 66 provides the ability to communicate with switches 56 via a reserved signaling channel 58 (described in the co-pending application Ser. No. 09/060,520). Path/device discovery function 60 learns what network elements and paths between endstations exist within the LAN and maintains respective lists of each in network elements registry 57 and path list 59." It is observed that no mention is made of creating a matrix of catalog elements for the data elements of at least one of said at least one data catalog, forming a connection representation between pairs of elements in each said at least one data catalog; instantiating connections in the connection representation, and employing the matrix in a network action. Furthermore, no explanation is attempted by the Office Action to reconcile how such vastly differing subject matter could possibly teach the claimed limitations.

Finally, it is noted that the Office Action contradicts itself by first stating, "Golden did not disclose in detail creating a matrix of connection cells formed by an intersection of pair elements," but later alleging that Golden discloses "creating a matrix of catalog elements for the data elements of at least one of said at least one data catalog; forming a connection representation between pairs of elements in each said at least one data catalog; instantiating connections in the connection representation; and employing the matrix in a network action." OA, ¶¶ 2 and 47. No explanation of this inconsistent interpretation of Golden's teachings is offered in the Office Action.

Application Serial No. 09/327,708

Thus, for least these reasons, the Appellant respectfully submits that Golden and Elliott, either alone or in combination, do not teach or suggest all the claim limitations of claim 91. Moreover, the Appellant believes that the rejection of claim 91 is improper and respectfully requests that the Board reverse the rejection of claim 91.

Claims 92-96 are dependent on and further limit claim 91. Since claim 91 is believed allowable, claims 92-96 are believed allowable for at least the same reasons as claim 91. The Appellant therefore requests that the Board reverse the rejection of claims 92-96.

**III. There is no Motivation to Combine or Modify Golden with Elliott**

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the reference or to combine the reference teachings. MPEP 2143. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143 citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In the Office Action, the Examiner argues that it would be obvious to one of ordinary skill in the art to have incorporated the teachings of Elliott with that of Golden. OA, ¶ 2. The Office Action, however has not explained, and it not evident, why a person of ordinary skill in the art would have found it obvious to reconstruct Golden to "provide for more efficient and more effective traffic shaping mechanisms and processes for ATM switches and other routers that route traffic shaping mechanisms to multiple outputs for time multiplexed output emission." In this regard, neither Golden nor Elliott express any appreciation of such alleged advantages. In this light, it is apparent that the only suggestion for combining Golden and Elliott in the manner

Application Serial No. 09/327,708

advanced by the Examiner stems from hindsight knowledge impermissibly derived from the Applicant's disclosure.

For at least this reasons, the Appellant respectfully asserts that a *prima facie* case of obviousness for claims 1-45 and 91-96 as not been established by the Examiner. As such, the Appellant respectfully requests that the Board reverse the rejection of claims 1-45 and 91-96.

Application Serial No. 09/327,708

**Conclusion**

In view of the foregoing, Appellant submits that the rejections of claims 1-45 and 91-96 are improper and respectfully requests that the rejections of claims 1-45 and 91-96 be reversed by the Board.

Respectfully submitted,

Dated: May 15, 2006

A handwritten signature in black ink, appearing to read 'Ido Tuchman', is written over the typed name and address.

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Application Serial No. 09/327,708

**Appendix A**  
**Pending Claims**

Claim 1. A method for representing interconnection of a plurality of elements on a network, the method comprising:

providing a first catalog for a first subset of said elements,  
and providing a second catalog for a second subset of said elements;

5 creating a matrix of connection cells formed by an intersection of a pair of elements, wherein a first element of each pair is taken from the first catalog and a second element of each pair is taken from the second catalog; and

forming a connection representation for at least a subset of  
10 the pairs.

Claim 2. A method as recited in claim 1, wherein at least one element is a catalog of sub-elements, and the method further comprises the step of including all sub-elements in the matrix.

Claim 3. A method as recited in claim 1, wherein the network is a communications network and at least a subset of the elements includes routers.

Claim 4. A method as recited in claim 1, wherein the network is an IP network and at least a subset of said elements have an IP protocol stack.

Claim 5. A method as recited in claim 1, wherein at least one particular element in the first catalog is the same as a particular element in the second catalog.

Claim 6. A method as recited in claim 1, wherein at least one of the catalogs includes a plurality of sub-catalogs.

Claim 7. A method as recited in claim 1, wherein at least a portion of the network is a computer network.

Claim 8. A method as recited in claim 1, wherein at least a portion of the network is a virtual network.

Claim 9. A method as recited in claim 1, wherein at least a portion of the network is a network implemented using a layer above a physical layer.

Application Serial No. 09/327,708

Claim 10. A method as recited in claim 1, wherein at least a portion of the network is an overlay network.

Claim 11. A method as recited in claim 10, wherein at least a portion of the overlay network is an IPSec network.

Claim 12. A method as recited in claim 10, wherein at least a portion of the overlay network provides Quality of Service.

Claim 13. A method as recited in claim 10, wherein at least a portion of the overlay network is an MPLS network.

Claim 14. A method as recited in claim 1, wherein the network includes VLANs.

Claim 15. A method as recited in claim 1, further comprising the step of configuring at least a portion of the network employing the representation.

Claim 16. A method as recited in claim 1, wherein at least a portion of one catalog is formed using combinatorial operations upon elements of other catalogs.

Claim 17. A method as recited in claim 1, further comprising associating at least one task with at least one connection.

Claim 18. A method as recited in claim 17, further comprising triggering at least said one task as a result of a change of a state of said one connection.

Claim 19. A method as recited in claim 1, wherein at least one of the elements is an abstract entity.

Claim 20. A method as recited in claim 19, wherein an element embodies the attributes of Quality of Service.

Claim 21. A method as recited in claim 19, wherein an element embodies the attributes of security.

Claim 22. A method as recited in claim 1, wherein at least one of the elements is a physical entity.

Claim 23. A method as recited in claim 1, further comprising displaying at least one portion of the matrix.

Application Serial No. 09/327,708

Claim 24. A method as recited in claim 1, further comprising monitoring at least one portion of the matrix.

Claim 25. A method of claim 1, wherein the matrix is structured such that elements of a row are different from elements of a column.

Claim 26. A method of claim 25, wherein at a least a portion of the connections form a star network.

Claim 27. A method of claim 1, wherein the matrix is structured such that elements on a the row are identical to elements on a column.

Claim 28. A method of claim 27, wherein at a least a portion of the connections form a mesh network.

Claim 29. A method as recited in claim 2, wherein at least another element is a second catalog of sub-elements and the method further comprises the step of forming a sub-matrix of said one element with said another element.

Claim 36. A method as recited in claim 1, further comprising employing a wizard to form at least a subset of the elements.

Claim 31. A method as recited in claim 1, further comprising initializing all connections to a connected state.

Claim 32. A method as recited in claim 1, further comprising employing a wizard to determine which connections to be brought to a connected state.

Claim 33. A method as recited in claim 1, further comprising initializing all connections to a non-connected state.

Claim 34. A method as recited in claim 1, further comprising choosing at least one pair upon which a manipulation is performed.

Claim 35. A method as recited in claim 34, further comprising modifying at least one changeable attribute of the connection.

Claim 36. A method as recited in claim 35, further comprising causing an inheritable change to be inherited by a group of inheritors.

Application Serial No. 09/327,708

Claim 37. A method as recited in claim 36, wherein a first element is a first gateway, a second element is a second gateway, and the attribute is setting a security policy, and the step of causing causes the security policy to be set at all elements included in the first and second gateway.

Claim 38. A method as recited in claim 36, wherein a first element is a catalog of sub-elements, and the attribute is setting a Quality of Service policy, and the step of causing causes the Quality of Service policy to be set at all sub-elements of the first element.

Claim 39. A method as recited in claim 6, wherein a sub-catalog includes other sub-catalogs.

Claim 40. A method as recited in claim 1, further comprising monitoring at least a portion of a network state in accordance with the representation.

Claim 41. A method as recited in claim 40, further comprising displaying at least a portion of the network state.

Claim 42. A method as recited in claim 41, wherein the step of displaying includes employing color codes for showing attributes.

Claim 43. A method as recited in claim 1, further comprising the step of modeling connections.

Claim 44. A method as recited in claim 41, further comprising indicating changes in performance in response to an occurrence.

Claim 45. A method as recited in claim 1, wherein a least one element of a particular pair is a sub-catalog, the method further comprising expanding elements of the pair into a sub-matrix.

Claim 91. A method for representing on a display a connection representation, the method comprising:

forming at least one catalog of data elements;  
creating a matrix of catalog elements for the data elements of  
at least one of said at least one data catalog;  
forming a connection representation between pairs of elements  
in each said at least one data catalog;



Application Serial No. 09/327,708

instantiating connections in the connection representation; and employing the matrix in a network action.

Claim 92. A method as recited in claim 88, wherein the network action includes an action taken from a group of actions including monitoring, problem determination, tuning and modeling.

Claim 93. A method as recited in claim 88, wherein at least one catalog of is a catalog of elements considered for interconnection by themselves.

Claim 94. A method as recited in claim 88, further comprising manipulating catalog elements to create at least one new catalog from a union of existing catalogs.

Claim 95. A method as recited in claim 88, further comprising employing an operation taken from a group of operations consisting of: typing, ordering, adding, moving and deleting to and from one or more catalogs.

Claim 96. A method as recited in claim 92, wherein the operation of typing is a catalog class taken from a group of classes consisting of: Endpoint catalog; Tunnel catalog; Encryption methods catalog; Validity catalog; Action catalog; and Traffic Loading catalog.

Claim 97. A method as recited in claim 92, wherein the operation of typing is a catalog class taken from a group of classes consisting of: Endpoint catalog; Tunnel catalog; Encryption methods catalog; Validity catalog; Action catalog; and Traffic Loading catalog.

Application Serial No. 09/327,708

**Evidence Appendix**

None.

Application Serial No. 09/327,708

**Related Proceedings Appendix**

None.